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# ABSTRACT OF THE DISCLOSURE

10                   A thermal inorganic resist for lithographic processes and image  
creation is disclosed. In one embodiment an In layer of 15 nm is deposited,  
followed by a Bi layer of 15 nm. Upon exposure to a optical light pulse of  
sufficient intensity the optical absorption heats the film above the eutectic melting  
point (110°C for BiIn) and the resist forms an alloy in the exposed area, replicating  
15 patterns projected on its surface. Optical characteristics of the alloyed layers are in  
these resists typically different from the unexposed layers creating a visual image of  
the exposure pattern before the development etch aiding in exposure control. The  
resist layer is then stripped, leaving the pattern layer on the substrate. In resists  
showing significant optical differences (such as BiIn) after exposure this same  
20 material can be used to create images for data storage, and, when transparent,  
photomasks for optical lithography.